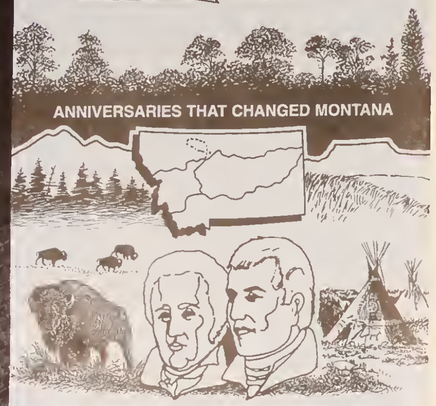
S
629.13254
A5MAC
2001

# MONTANA
## Aeronautical Chart

2007
MONTANA STATE LIBRARY
1515 E. 6th AVE.
HELENA, MONTANA 59620
MONTANA STATE LIBRARY
3 0864 0015 3809 2

Wright Brothers First Flight — Dec 1903




Outset of Lewis and Clark Journey — Dec 1803

**Fly the Big Sky Country**

We co m to the Big Sky Country!

To truly appreciate the reason for Montana's nickname "Big Sky Country", we invite you to travel in Montana by aircraft. We encourage you to stay awhile during your journey to explore our state's amazing array of one-of-a-kind scenic and recreational attractions.

Dunng your stay, you will find modern and convenient airports, well-maintained recreational airstrips, beautiful scenery, blue-ribbon fishing streams, abundant wildlife, great snow for winter sports, comfortable and affordable accommodations and most important of all, the friendliest people in the West.

It is our pleasure to provide you with this aeronautical chart and we certainly hope you will utilize it to assist you in many safe and enjoyable flights over our magnificent Big Sky Country!

Welcome and safe flying!

Judy Martz, Governor
State of Montana

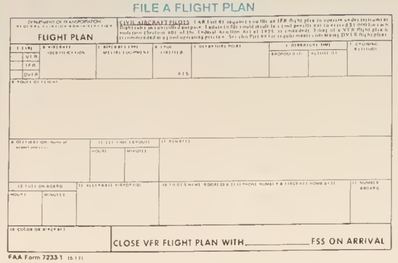
Michael D Ferguson, Administrator
Montana Aeronautics Division

MONTANA AERONAUTICS DIVISION

Cover Art Courtesy of
Gene Pisoris
of Montana State
Publications and Graphics

Photo by Don Like, Infinity Meadows

## FILE A FLIGHT PLAN

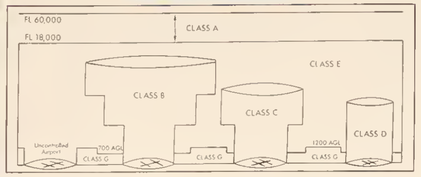



FAA Form 7233-1 (8-72)

EQUIPMENT SUFFIX

/X No transponder
/T Transponder with no altitude encoding capability
/U Transponder with altitude encoding capability
/D DME, no transponder
/B DME transponder with no altitude encoding capability
/A DME transponder with altitude encoding capability
/C RNAV, transponder with no altitude encoding capability
/I RNAV, transponder with altitude encoding capability
/W RNAV, no transponder

## AIRSPACE CLASSIFICATION




| Airspace Features | Class A | Class B | Class C | Class D | Class E | Class G |
|---|---|---|---|---|---|---|
| Current Airspace Equivalent | Positive Control Area (PCA) | Terminal Control Area (TCA) | Terminal Control Area (TCA) | Airport Radar Service Area (ARSA) | Airport Traffic Area (ATA) and Control Zone (CZ) | Uncontrolled Airspace |
| Operations Permitted | IFR | IFR and VFR | IFR and VFR | IFR and VFR | IFR and VFR | IFR and VFR |
| Entry Prerequisites | ATC clearance | ATC clearance | ATC clearance for IFR. Radio Contact for all. | ATC clearance for IFR. Radio contact for all. | ATC clearance for IFR. Radio contact for all. | None |
| Minimum Pilot Qualifications | Instrument Rating | Private or Student Certificate | Student Certificate | Student Certificate | Student Certificate | Student Certificate |
| Two-way Radio Communications | Yes | Yes | Yes | Yes | Yes for IFR | No |
| VFR Minimum Visibility | N/A | 3 Statute Miles | 3 Statute Miles | 3 Statute Miles | ★ 3 Statute Miles | ★★ 1 Statute Mile |
| VFR Minimum Distance from Clouds | N/A | Clear of Clouds | 500 below, 1,000 above, and 2,000 horizontal | 500 below, 1,000 above, and 2,000 horizontal | ★ 500 below, 1,000 above, and 2,000 horizontal | ★★ 500 below, 1,000 above, and 2,000 horizontal |
| Aircraft Separation | All | All | IFR and VFR and runways ops | IFR and VFR and runways ops | IFR and VFR | None |
| Conflict Resolution | N/A | N/A | Between IFR and VFR ops | No | No | No |
| Traffic Advisories | N/A | N/A | Yes | Workload permitting | Workload permitting | Workload permitting |
| Safety Advisories | Yes | Yes | Yes | Yes | Yes | Yes |

★ Different visibility minima and distance from cloud requirements are for operations above 10,000 MSL.
★★ Different visibility minima and distance from cloud requirements are for night operations, operations above 10,000 MSL, and operations below 1,200 AGL.

Made C in A, B, C

## MOUNTAIN FLYING

### GENERAL

Always remember that you are flying in a huge and very sparsely populated territory. If you have a problem, it may be some time before anyone knows about it. You will be landing on fields where there is no one to help you in case of trouble and it is a long walk out. Do not take chances.

Navigation is critical — have the necessary maps and know where you are. Pilotage is the means of navigation you will be relying on.

The horizon in the mountains is difficult to determine. If you use the tops of the mountains for the horizon, the aircraft will be in a constant climb attitude. Use your attitude indicator and check the airspeed and altimeter to confirm your attitude.

1. Make sure that your proficiency level and your aircraft meet the special demands of your planned flight.
2. If you are not sure of your capabilities, take some dual instruction from a flight instructor experienced in mountain flying.
3. Keep your aircraft as light as possible.
4. Be familiar with your planned route of flight and destination airport. Check the field conditions with FSS or experienced local pilots. Familiarize yourself in advance with the field length, elevation and any special approach/departure procedures.
5. Obtain a thorough weather briefing. A forecast of marginal VFR frequently translates to IFR in the mountains.
6. Plan your trip for early morning or evening hours. Turbulence is usually greatest from 10:00 a.m. to 6:00 p.m.
7. Stay out of the mountains if the forecast winds aloft exceed 25 knots below 12,000 MSL. The wind velocity can double in the vicinity of mountain passes and canyons. NEVER fly up a blind or narrow canyon.
8. Mountain winds follow contours much like a stream. The air on the lee (downwind) side of a mountain may be extremely turbulent. Fly on the upwind side of a canyon whenever possible.
9. Cross-check your instruments and attitude indicator frequently. Visual horizons in the mountains may be illusory.
10. Maintain your airspeed in downdrafts and don't panic. Be able to turn to lower terrain at all times.
11. Approach ridges at a 45° angle, so if you're caught in a downdraft, you can turn away toward lower terrain.
12. Be courteous to those on the ground who are enjoying a wilderness experience. Maintain sufficient altitude — 2,000 AGL is suggested over wilderness areas.
13. Plan your trip over valleys as much as possible.
14. Carry a good survival kit and familiarize yourself with its use.

### LANDINGS

Safety of flight dictates that each pilot transmit "in the blind" on 122.9 whenever approaching or departing a non-towered equipped airport to advise other aircraft of your intentions. You can not always maintain constant visual contact with the runway at many of the back country strips and acceptance of this practice will assure an added safety factor when using these landers. These airstrips receive considerable use by aircraft at certain times. Before flying into this territory, practice short field power on landings. Be sure you can land your aircraft on a fifty foot spot not once in a while but every time.

1. Land upstream (uphill) whenever possible, but remember that many mountain airstrips are "one way" only. Wet grass reduces braking action and most mountain airstrips are short.
2. Control your rate of descent with power. Maintain a stable airspeed (generally the short field approach speed listed in your aircraft operations manual).
3. Before beginning your approach, circle you intended destination to ensure that the field is clear of other aircraft, livestock, wildlife, etc.
4. Abort your approach if the air becomes turbulent on your fin-down. Avoid low altitude maneuvering.

### TAKEOFF

Each take-off requires careful analysis of all factors that will affect the take-off. Aircraft performance, runway condition (soft, rough, height of vegetation) — all have negative effects on take-off performance. Density altitude (temperature, field elevation, humidity — again these factors (as they get "higher") are all negative as far as aircraft performance is concerned. Engine horsepower is also affected by density altitude — adjust mixture control for maximum power. CAUTION: select a spot free of rocks for engine runup. You will probably be unable to attain the performance levels indicated in your aircraft operator's handbook. It is best to be conservative as opposed to being too optimistic when considering take-off performance. It is recommended that, during summer months, take-offs and landings be made during early morning hours and during early evening hours when the air is least turbulent.

1. CHECK DENSITY ALTITUDE! If take-off performance for your aircraft is questionable, wait until evening or early morning when conditions are more favorable.
2. Remember that tall grass or soft/rough field conditions can add considerably to your take-off distances.
3. Choose a going-no point on the runway. If not airborne at that point, abort the take-off and wait for better conditions.
4. Take-off downstream (downhill) whenever possible.

### TAXI

A WORD OF CAUTION! Taxiing off of established runways at back-country airstrips requires considerable caution. There are hazards such as gopher holes, depressions, and rocks which may be hidden by tall grass. If unsure of surface condition, shut your engine down and push the aircraft to a parking spot well off of the runway. A prop strike would "ruin your whole day."

## RECREATION AIRPORTS

| Nearest point to recreational area | Dude ranches | Camping facilities available on field. Check for camping | Fishing stream adjacent to airport | Camping permitted on or near airport | Ski area near airport |
|---|---|---|---|---|---|
| ● | | ● | ● | ● | |
| | ● | | ● | ● | |
| ● | ● | | | | ● |
| | | ● | ● | | |
| | | ● | ● | ● | |
| | | ● | ● | | |
| ● | | ● | ● | | |
| ● | ● | ● | ● | | |
| ● | | ● | | | ● |
| | | ● | ● | ● | |
| | | ● | | | |
| | ● | | | | ● |
| | | ● | | | |
| | | ● | ● | | |
| | | ● | ● | | |
| ● | | ● | ● | | |
| | | ● | ● | | |
| | | ● | ● | | |
| | | ● | ● | | |
| ● | ● | ● | ● | | |
| | | ● | ● | | |
| | | ● | ● | | |

| AIRPORT | LAT. | LONG. |
|---|---|---|
| BABB | 48-51 | 113-26 |
| BENCHMARK | 47-28 | 112-50 |
| BOZEMAN | 45-46 | 111-10 |
| CANYON FERRY | 46-25 | 111-34 |
| COLUMBUS | 45-38 | 109-15 |
| CONNER (WEST FORK) | 45-52 | 114-13 |
| FORT SMITH | 45-19 | 107-56 |
| GARDINER | 45-03 | 110-44 |
| KALISPELL (CITY) | 48-10 | 114-17 |
| LINCOLN | 46-58 | 112-39 |
| MEADOW CREEK | 47-51 | 113-25 |
| MISSOULA | 46-55 | 114-05 |
| POLSON | 47-41 | 114-11 |
| RED LODGE | 45-11 | 109-17 |
| ROCK CREEK | 46-43 | 113-39 |
| SCHAFER | 48-05 | 113-15 |
| SEELEY LAKE | 47-11 | 113-27 |
| SPOTTED BEAR | 47-58 | 113-34 |
| THREE FORKS | 45-53 | 111-34 |
| TIBER DAM | 48-19 | 111-07 |
| TROY | 48-29 | 115-54 |
| VALIER | 48-18 | 112-15 |
| WEST YELLOWSTONE | 44-41 | 111-07 |
| WISDOM | 45-35 | 113-28 |
| WISE RIVER | 45-46 | 112-59 |

## VFR TRANSPONDER CODES- MODE A/3

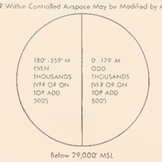
| OPERATION | CODE |
|---|---|
| VFR | 1200 |
| Radio Failure (See AIM) | 7600 |
| Hijack | 7500 |
| EMERGENCY | 7700 |

## TIME CONVERSION TO GMT(Z)

| | |
|---|---|
| Eastern Standard Time, add 5 hours | Eastern Daylight Time, add 4 hours |
| Central Standard Time, add 6 hours | Central Daylight Time, add 5 hours |
| Mountain Standard Time, add 7 hours | Mountain Daylight Time, add 6 hours |
| Pacific Standard Time, add 8 hours | Pacific Daylight Time, add 7 hours |
| Alaska, add 9 hours | Hawaii, add 10 hours |

## CRUISING ALTITUDES

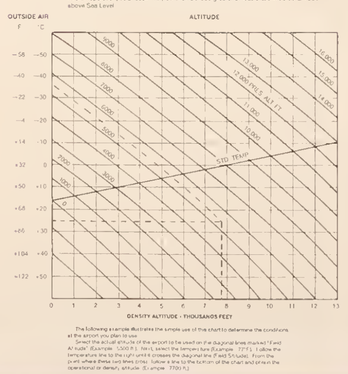
(IFR Within Controlled Airspace May be Modified by ATC)




## DENSITY ALTITUDE CHART

LEARN TO USE THIS CHART — POST IN PLANE

Operational altitude is the calculated altitude of the air at which the aircraft is flown. Aircraft operation, as a result may be at an altitude greater or less that the actual altitude above Sea Level.




The following example illustrates the simple use of the chart to determine the conditions at the airport you plan to use:

Select the actual altitude of the airport (to be used on the diagonal lines marked 'Feet Above Sea Level') and follow it down to the bottom scale (Example - 7,775). Follow the temperature line to the right until it crosses the diagonal line (Feet Altitude). From the point where these two lines cross, follow a line to the bottom of the chart and arrive at the operational or density altitude. (Example - 7700 ft.)

Photo by Larry Mayer, Bull Mountains

Photo by Atkinson, T.M., Glacier National Park

Photo by Dennis Sexton, T.M., Grandview Ranch/Ranch

Photo by Gerry Dove, Three Lakes

Photo by Larry Mayer, Beartooth Mountains

Photo by Daniel Dankenwald, Big Sky Balloonfest, Billings

Photo by Unknown, T.M., Montana Mule

### Summer

Spread your wings and fly. The clear, blue sky of Montana beckons.

Glacier National Park, America's most spectacularly beautiful mountain park, offers more than a million acres of unspoiled scenery, 200 sparkling lakes, crystal streams, awesome peaks, alpine meadows, rare wildlife, 900 miles of back country trails and dozens of well-groomed campsites as well as luxury accommodations.

Visit Yellowstone, then fly to western Montana where range upon range of mountains invite you to explore the wilderness on foot or by horseback. Relax in a mountain lodge, strike out on your own or join one of the many licensed outfitters or guides.

Dozens of state parks and recreation areas provide the finest in water sports (including sailing regattas), cave exploring, rock hounding and excellent fishing throughout the summer.

Summer is also rodeo time with plenty of bronc riding, calf roping and bull dogging action all across the state.

Ever been to an Indian reservation? Montana has seven big ones with everything from all-Indian rodeos to colorful traditional ceremonials.

Photo by Wild Bronner, T.M., Great Falls Rodeo

Photo by Lee Mason, Dorothea Mason on Wing of PT-19, Missoula, 1944

Photo by Larry Mayer, Firefighting Effort

Photo by Daniel Dankenwald, Big Sky Balloonfest, Billings

Photo by Dorene Sexton, T.M., Horseshoe Valley

Photo by Larry Mayer, Press Layout

Photo by Don Like, Meadow Creek

Photo by Larry Mayer, Long E-2, Bighorn Canyon

Photo by Daniel Dankenwald, A-26 Stony Bomber

Photo by Lee and Dorothea Mason, PT-19, 1946

Photo by Larry Mayer

Photo by FA. Mills, Northwest Montana

Photo by FA. Mills, USFS Turbo DC-7

Photo by FA. Mills, B-78 Privateer Stony Bomber

Photo by F.A. Mills, Montana Fire

Photo by Larry Mayer, Mission Mountains

Photo by Don Like, Winter Survival Training

### Winter

Pack your parka, toss in your skis and take off for Montana this winter. Beneath your wing tips you'll find a vast white world of powder snow just waiting to be explored. Best of all, it's still uncrowded and big on western hospitality.

With 27 Rocky Mountain ski areas to choose from you can cruise down the gentler novice or intermediate slopes or "hot dog" it down the heart stoppers. If you're looking for elegant resorts, we've got them—complete with condominiums, heated pools, gourmet restaurants and all the trimmings.

Montana has over 60 paved and serviced airports, 15 of them with full commercial facilities. Most winter resorts furnish transportation from your tie-down right to the lodge.

If cross-country skiing or snowshoeing appeal, select one of the back country resorts and break your own trails. Or perhaps you'd prefer just to relax by a big, crackling Montana pine fire.

Snowmobiling is popular, too, and many resorts offer guided winter tours. Yellowstone Park has outstanding opportunities for viewing and photographing wildlife in winter's pristine environment.

Photo by Unknown, T.M., Montana Slopes

Photo by Daniel Dankenwald, Glendive



Photo by Wolf Brownlee, T.M., B-1 Moose



Photo by Montana ARB, 80th Fw.ow Flight

### Fall

Autumn is the time to really savor Montana. Days are still warm, nights have turned crisp. Mountainsides are splashed with reds and golds, out on the ranges the grass has turned to yellow. The smell of wood smoke lingers in the quiet air, as the lakes grow colder trout are coming to life again. Crowds are gone from the parks and early snows on the peaks have driven wildlife down within easy viewing range.

Whether you hunt with gun or camera, Montana offers one of the nation's greatest reservoirs of wildlife. Bear, elk, deer, antelope, moose, sheep, and goats are here in abundance. Flyways host thousands of geese, ducks and other waterfowl. Grouse and pheasant still roam at will. Lake McDonald, in Glacier National Park, attracts unusual numbers of Bald Eagles from mid October through November.

Rich in mineral resources, the state is increasingly popular for gold panning and rock hounding as well. Mountain streams often yield enough "color" to take home a souvenir, sapphires, garnets, rubies, agates and petrified wood reward rockhounds.

And, when it comes to unusual fall events, where else can you attend a buffalo roundup?

Photo by Wayne Mumford, T.M., Creston



Photo by F.A. Mills, Ag Ops and Fire Suppression

# MONTANA VFR AERONAUTICAL CHART

AERONAUTICAL SYMBOLS

AERODROMES

NAVAIDS

MISCELLANEOUS

**CAUTION**

NUMEROUS HAZARDOUS POWER LINE CROSSINGS IN WESTERN MONTANA

(Most unlighted and unmarked)